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times of crises: COVID-19 Crisis vs.  
the Great Recession**

Cathal O'Donoghue

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**Cathal O'Donoghue**

*National University of Ireland Galway*

**Denisa M. Sologon**

*Luxembourg Institute of Socio-Economic Research (LISER)*

**Iryna Kyzyma**

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## **Abstract**

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**Keyword:** COVID-19 crisis, Great Recession, social policy responses, income losses, living standards, microsimulation.

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# Novel welfare state responses in times of crises: COVID-19 Crisis vs. the Great Recession

Cathal O'Donoghue<sup>1</sup>, Denisa M. Sologon<sup>2</sup>, Iryna Kyzyma<sup>2</sup>

<sup>1</sup> National University of Ireland Galway, Ireland

<sup>2</sup> Luxembourg Institute of Socio-Economic Research (LISER), Luxembourg

## Abstract

This paper looks at the social policy responses to the Great Recession and the COVID-19 crisis and assesses their impact on preserving living standards in Ireland. The former crisis was in an environment pressured to balance budgets with a greater focus on cost reduction. In contrast, during the COVID-19 crisis, there was a greater focus on mitigating the impact on household incomes largely funded by debt. Another innovation in the current crisis were the joint public and private responses through social partnership. Using the microsimulation methodology, we find a stronger social policy response during the COVID-19 crisis than during the financial crisis. However, as the impact of the COVID-19 crisis was deeper and quicker, family support was not as strong as there were more individuals out of work. The contribution of the private support based on social partnership, however, was stronger. As a result, those on lower incomes ended up with higher disposable incomes at the onset of the COVID-19 crisis, albeit with policy learning, this fell over the first wave of the pandemic. We conclude by reporting a positive impact on trust in public institutions during the COVID-19 crisis as opposed to a decline during the financial crisis.

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<sup>1</sup> The Authors are grateful to the Irish Health Research Board and Irish Research Council for funding this research. Corresponding author: Iryna Kyzyma (address: 11, Porte des Sciences, L-4366 Esch-sur-Alzette, Luxembourg; email: [Iryna.Kyzyma@liser.lu](mailto:Iryna.Kyzyma@liser.lu)).

## 1. Introduction

Like other countries, Ireland was hit rapidly by a major crisis in the Spring of 2020 induced by the COVID-19 pandemic. It was the second crisis in a little over a decade, where the financial crisis that arose around the time of the bankruptcy of Lehman Brothers in September 2008 disproportionately affected Ireland. In this paper, we consider and analyse the insulating impact of the immediate social policy responses to both crises.

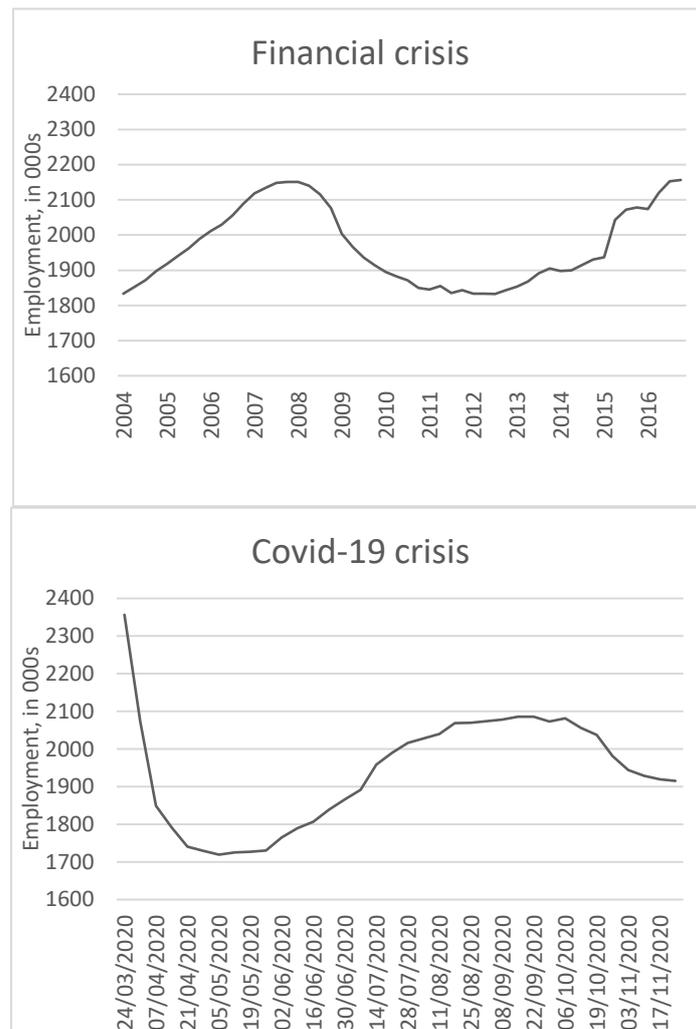
Different dimensions of crises and the public and private responses affect different people in different ways resulting in distributional impacts. The financial crisis saw labour market impacts in the construction sector, while austerity-focused policy measures had important distributional impacts (Callan et al., 2014). The COVID-19 crisis is very different, with increased illness and mortality, policy measures aimed at closing non-essential businesses and services, the restriction of movement, gatherings and public events, self-isolation and the reduction of public transport and mobility (Hale et al., 2020; Coffey et al., 2020; OECD, 2020). Policy mitigation measures have been implemented, including social protection measures, debt relief and fiscal stimuli (O'Donoghue et al., 2020, Coffey et al., 2020; OECD, 2020). The employment impact in both crises was highly asymmetric with younger workers, women and lower educated more likely to lose their jobs (Jenkins et al., 2013; Adams-Prassl et al., 2020; World Bank, 2020).

Both crises have spawned a wealth of distributional analyses. Inequality analyses of the Great Recession focused on labour market impacts (Jenkins et al., 2013; Salgado et al., 2014), the mitigating impact of policy responses (Joumard et al., 2012, Taylor, 2014) and automatic stabilisers (Dolls et al. 2012; Alari & Tasseva, 2020), with a significant focus on the consequences of public finance rigidity and austerity (Savage et al., 2019; Matsaganis, 2011, 2020; Matsaganis and Leventi, 2013, 2014). Recent studies on COVID-19 in Europe have seen differential distributional impacts. Brewer and Gardiner (2020) and Brewer and Tasseva (2020) examined the distributional impact of the UK and found that social protection measures, both new measures and existing stabilisers, had an important role in mitigating the income impact of the crisis leading to an overall reduction in poverty but relatively unchanged inequality. For Italy, Figari and Fiorio (2020) found that the net impact was slightly inequality and poverty increasing, albeit the targeted measures significantly mitigated it. Sologon et al. (2020a) analysed the impact of policy responses on the household income distribution in Luxembourg, the country with a strong pre-crisis system of automatic stabilizers (taxes and benefits), and found that the system absorbed the employment and income shocks very well, with minimal inequality impact. Compared to other countries, Ireland had an inequality reducing impact of the policy measures introduced during the COVID-19 crisis (Beirne et al. 2020; O'Donoghue et al. 2020).

After one year of the COVID-19 crisis, it is apparent that a different policy approach is being undertaken. There is greater policy innovation, greater public-private partnership and a much lower focus on austerity. In this paper, we examine the policy formation process that resulted in these differential outcomes. Given the need for a speedy response, initial policy responses were crude, with policy learning over the crisis resulting in adjustments being made to make policies more targeted. Similarly, the policy response has been broader than merely focusing on publicly financed and delivered instruments. Maintaining household incomes, and in particular cash flow, during the crisis has relied on both public and private sphere interventions. We consider the impact and timing of these interventions over the crisis.

We contrast the policy response in the COVID-19 crisis, which was relatively generous, with the austerity-focussed policy response to the financial crisis during the emergency budget of 2009. The COVID-19 crisis had a much deeper and immediate impact in terms of the change in the number of individuals registered for out of work benefits, giving the necessary nature for the public policy response. It is still early to say what the longer-term impacts of this pandemic will be, but after the number of employed individuals sharply decreased in March and April 2020, it started rising again in May (see Figure 1).

**Figure 1. Comparing the impacts of the COVID-19 and financial crises on employment**



Note: Based on the Labour Force Survey and Live Register data.

Methodologically, as there is no detailed household income data available in the middle of the COVID-19 crisis, we utilise a microsimulation approach to nowcast the current income distribution. Our “nowcasting” approach explores the heterogeneity of changes in the population with the aim to produce a real-time picture of the population (O’Donoghue & Loughrey, 2014; Sologon et al. 2020a; O’Donoghue et al. 2020). We “update” the latest available wave of the European Survey on Income and Living Conditions (EU-SILC) using dynamic microsimulation techniques and real-time detailed statistics on employment, prices and industry-specific wage growth rates to calibrate the simulations and to capture the rapid economic changes.

In motivating the paper, we reflect next on the theory of public and private delivery of welfare state objectives, followed by a description of the new policy measures and existing automatic stabilizers operating during the Great Recession and COVID-19 crises.

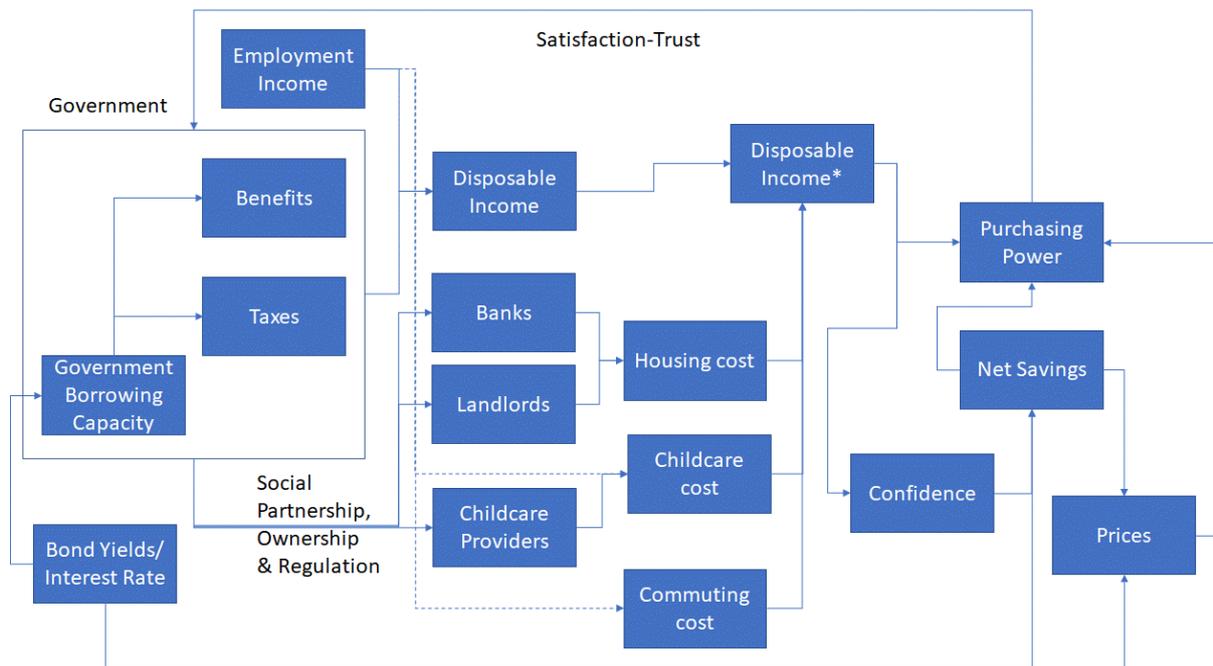
## 2. Theoretical Framework

Individual welfare is generated from four sources (see Barr, 1992): (1) labour market and firms; (2) state; (3) private provision; and (4) voluntary welfare.

Individuals receive their main incomes from work. In addition, they benefit from different types of occupational welfare, such as complementary pensions, health insurance, transportation, child-care, provided or (co-) financed by the employer. The government contributes to individual welfare by redistributing incomes via taxes and benefits, market regulations, social partnership and provision of public goods. Depending on the level of welfare received from the market and the state, individuals may also seek for private sources of welfare provision by investing in voluntary private insurance, accumulating savings, and redistributing resources within the family.

Figure 2 illustrates the relationship between the welfare provision components. In what follows, we zoom in on the role of the state as a regulator of welfare provided by the market and by private sources.

**Figure 2. Theoretical Framework**



### *The Impact of the State on Individual Welfare*

The state can influence individual welfare in multiple ways by activating a set of policy instruments, which have a direct or indirect impact on purchasing power. Given that the purchasing power of individuals depends on the size of their disposable incomes and prices of goods and services, the government can affect it through two channels:

- by influencing the size of disposable incomes (via distribution and redistribution, labour market regulations, etc.), and
- by influencing consumption patterns and spending (via price regulation, monetary policy, housing market regulation, the provision of public goods, etc.).

Redistribution represents one of the main objectives of the welfare state (Gough, 1979; Barr, 1992), driven by the desire of the government to reach social justice in the society, its ambition to raise trust in public institutions and maximize voters' support during elections.

Governments redistribute via taxes and benefits. The redistributive impact of taxes depends on their size, portfolio and progressivity. Personal income tax is the most progressive tax whereas consumption taxes and real estate taxes tend to be regressive in most OECD countries (Joumard et al., 2012). The degree of redistribution achieved by the provision of benefits, in turn, depends on: (i) the type of the transfer (flat-rate versus earnings-related); (2) the degree of means-testing (targeted versus universal); and (3) the percentage of individual recipients in each income decile (Kyzyma and Williams, 2017).

A flat-rate transfer implies the same payment for all recipients, whereas an earnings-related transfer depends on previous earnings. In general, earnings-related transfers are less redistributive than flat-rate transfers, but their redistributive impact also depends on the income position of the recipients (Heady et al., 2010). Targeting represents the extent to which benefits are directed at the specific recipients (e.g. the poor) (Creedy, 1996; Heady et al., 2010). It is usually implemented via means-testing, when the eligibility for a certain benefit is defined by taking into account the entire income (assets) of the household. Universal benefits, in contrast, are provided without means-testing. Targeted transfers are in general more effective in redistributing incomes than universal transfers because they focus on the provision of scarce resources to those most in need (Savage et al., 2019).

Labour market regulations serve as another important policy instrument for influencing the size of individual incomes. By setting a minimum level below which no one's work can be remunerated, the government shifts market incomes of those at the bottom of the distribution upwards, improving their living standards and reducing income inequality in the population (Autor et al., 2016). Similar redistributive effects are found for collective wage bargaining: higher collective bargaining coverage is typically associated with lower market income inequality and the other way around (Hayter and Weinberg, 2011). Finally, the government also serves as an employer for a substantial portion of the workforce. As shown by Rueda and Pontusson (2000), high public sector employment rates increase demand for workforce, which prevents high wage differentials.

Apart from the interventions directed at disposable income, the state may also affect purchasing power of individuals by influencing their consumption patterns and spending. Half of welfare state transfers in rich countries are in-kind benefits, such as health insurance, education, childcare and other services financed or co-financed by the state (Garfinkel et al., 2006). These services are usually more equally distributed than cash benefits, which reduce inequalities in consumption and standards of living across individuals with different levels of income.

The state also plays an important role in the regulation of the housing market and related individual expenditures. Apart from the provision of housing benefits and subsidized housing, governments also set regulations for the rental market and mortgages. As shown by Taylor (2014), the demand for housing and housing expenditure depend in part on the interest rates imposed on mortgages and mortgage requirements, which the state may choose to regulate. In

periods of crisis, the government might also take a decision to introduce mortgage deferrals and freeze rent payments thereby helping individuals to maintain descent living standards.

### *The Role of the State during the Crisis*

The role of the state intensifies during economic recessions, when it acts as an insurance provider to individuals who experience a decline in incomes due to unfavourable economic situation (Dolls et al., 2012; Salgado et al., 2014; Savage et al., 2019; Figari and Fiorio, 2020). As highlighted by Saez and Zucman (2020), governments can prevent a very sharp but short recession from becoming a long depression. On the one hand, employment/income shocks during the crisis activate the automatic stabilizers, which cushions the drop in individual incomes via the existing system of taxes and benefits. On the other hand, governments may introduce discretionary policy measures to strengthen purchasing power of individuals and their families in periods of economic uncertainty.

During the Great Recession of 2008, Dolls et al. (2012) found that automatic stabilizers played a key role in providing income insurance absorbing around 47% of the idiosyncratic unemployment shock in the European Union and 34% in the United States. The ability of automatic stabilizers to mitigate the impact of the crisis on individual incomes, however, depends on their design, which varies substantially across countries (Jenkins et al., 2013; Dolls et al., 2012; Alari and Tasseva, 2020). Anglo-Saxon systems target low-income individuals and are more generous in the provision of social assistance schemes, while unemployment benefits are flat-rate and limited in generosity. Scandinavian and Continental systems have a tradition of insurance-based unemployment benefits with social assistance schemes providing a safety net of last resort (Salgado et al., 2014). Automatic stabilizers in Eastern and Southern Europe are quite heterogeneous and much lower than in the Scandinavian and Continental countries (Dolls et al., 2012).

Countries also differ with respect to the discretionary policy measures they adopt to tackle the consequences of the crisis. Like any policy intervention, governmental responses to a crisis are contingent on local political and social contexts (Hale et al., 2020). They also depend on the government's ability to bear the costs of the recession (availability of budgetary resources and borrowing capacity). When resources are available, governments might introduce stimulus packages, which represent temporary transfer payments to individuals with the objective to increase the size of their disposable income and stimulate consumption (Dolls et al., 2012; Taylor, 2014). In the context of austerity, the welfare state becomes a subject to fiscal consolidation measures aiming to reduce welfare provisions and increase taxes (Salgado et al., 2014; Matsaganis, 2020).

### 3. Policy Responses to the Financial and COVID Crises

#### *Two Crises*

The financial and the COVID-19 crisis were rather different, as were the policy responses. The financial crisis began at the end of 2007, after a long period of growth, during a period known as the Celtic Tiger. The latter part of the boom was associated with a large increase in private debt that financed an unsustainable construction boom. After the Lehman Brothers collapsed and confidence fell in 2008, a vicious cycle occurred, where construction slowed dramatically, house prices fell, leading to a large decrease in employment in the construction and related sectors. This led in turn to an increase in public expenditure on unemployment benefits. As the banking sector had over extended itself in property lending, a fall in the price of property held as collateral undermined the entire banking system, requiring a state bailout. The heavy reliance of public sector revenues on taxes raised from the construction sector, combined with the increase in demand for unemployment benefits, led to a massive gap between public sector revenues and expenditures. While the main growth in unemployment occurred in 2009, it was 2012 when the numbers out of work peaked, followed by a strong recovery afterwards.

The COVID-19 crisis was different. The economy had been growing strongly since 2012 and, although the economy had not reached the same employment rate as in 2007, the numbers in employment surpassed the 2007 levels and public finances balanced. Most of the growth was due to export sectors such as international finance, the tech sector, pharma-medical and food. The main pressures in the property sector were due to rental prices, which had grown because of population growth during a time of limited house building. The crisis was driven by businesses closures to avoid social interaction. Those that remained open were either essential services or those that could continue their business online. During the first wave of the epidemic, in the spring and early summer of 2020, 598000 additional people were out of work because their businesses closed due to COVID-19. In addition, over 50000 were out of work due to either having to self-isolate because of a positive test or diagnosis for COVID-19 or because they were a close contact. The most affected sector was by far the accommodation and food service activities, relying on face-to-face interaction.

#### *The Social Policy Response*

The policy response to each crisis was different in Ireland, as outlined in Table A.1 in Appendix A. In both crises, the tax-benefit system underwent structural changes in order to deal with the issues that arose. In the 2007-2012 crisis, the structural changes related mainly to reducing the cost of the support measures and other welfare services. These included factors that influence social insurance coverage, such as increases in contributory requirements or reductions in the length of entitlement to social insurance benefits. A number of support measures were withdrawn, such as the early childcare supplement and mortgage interest relief. A new substantially reduced rate band was introduced for young people and the extra payment paid to social welfare recipients at Christmas was withdrawn. A new pension contribution for public sector workers was introduced to reduce the net cost of occupational pensions.

In the COVID-19 crisis, an entirely new system of support was introduced on the 15<sup>th</sup> of March with less stringent compliance costs and regulations.<sup>1</sup> A new pandemic unemployment payment (PUP) was created for those who lost their jobs. A similar although less stringent

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<sup>1</sup> In this paper, we focus primarily on social policy responses to the COVID crisis. For a more comprehensive description of wider policy responses, see Kennelly et al. (2020).

illness benefit was created for those who could not work due to a COVID-19 related illness or due to self-isolation as a close contact. As the crisis was expected to be temporary, the government established a wage subsidy payment to maintain a connection between employees and their employers until the crisis abated.

The Irish benefit system almost entirely consists of flat rate payments for different contingencies (unemployment, old age, illness, survivorship, caring). Benefits are either insurance-based or means-tested for those outside the insurance system or who have exhausted entitlement. As a result, the replacement rate (ratio of out of work payments to in-work income) is an important insurance element of the system. In terms of generosity of payments, there had been an improvement in the replacement rate in the run-up to the financial crisis. Recognising growing relative poverty rates, benefit rates increased at a rate that was higher than both prices or incomes. The increases in payment rates above the price index and, for some sectors, above the earnings index, continued into 2008 and 2009 for pension recipients. However, because of the pressures on the public finances, in 2010 there was a fall in social welfare payments for working age and a near halving for younger people. There were also pay reductions for public sector workers.

At the start of the COVID-19 crisis, payment rates for the new benefits were aligned to existing payment rates for unemployment benefits. However, given the scale of the crisis and the relatively low replacement rate for many workers, it was recognised that the rates of payment would not be sufficient. Another issue that became relevant was the fact that parents with children in child-care facilities would continue to remain liable for these payments even if they lost their jobs. As Ireland has amongst the highest child-care costs as a percentage of employment income, there would be a significant burden on parents who could no longer work (Immervoll and Barber, 2005). In response to these pressures, the state moved rapidly to change the unemployment and illness related payment rates from €203 per week to €350 within a fortnight of the start of the crisis.<sup>2,3</sup> In addition, the wage subsidy payments were increased.

More frequent policy changes in response to the crisis was a feature of both crises. A Supplementary Budget was announced in April 2009 as the economic crisis accelerated and the public finances worsened in Ireland. However, in the COVID-19 crisis, changes were more frequent and more rapid. The initial system was created with very limited time to assess impacts. An attempt was made to introduce greater wage supports for low paid workers who remained in employment and as a result a highly complex wage subsidy was established on March 26th. There were initially some concerns expressed by businesses in relation to the implications for higher paid workers, so a revision to the scheme was introduced on May 4<sup>th</sup>.

Unemployment and illness payments were initially flat rate in nature. In the second iteration of reforms, where payments were €350 per week, we have calculated that 40% of workers had a higher rate of pandemic unemployment payment than their previous wage, particularly for part-time workers. In the fourth iteration of reforms, on July 1 and after the bulk of the first wave had passed, pandemic payments were split into two rates: (i) a regular unemployment level of €203 was paid to those with previous income of less than €200 per week, and (ii) a €350 per week payment remained for higher earners. The structure became more nuanced and less generous in September, with the introduction of 3 rates of €203, €250 and €300 per week, for weekly earnings of under €200, €200-€300 and over €300. This change also saw the wage

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<sup>2</sup><https://www.irishtimes.com/news/ireland/irish-news/coronavirus-creches-will-not-ask-parents-for-fees-after-deal-with-state-1.4211230>

<sup>3</sup><https://www.kildarestreet.com/debates/?id=2020-05-06a.155&s=speaker%3A445>

subsidy scheme revert to a flat rate payment with two bands of €151 and €203. On October 16<sup>th</sup>, as the second wave of COVID-19 took off, the rate of €350 was re-introduced for the PUP for those earning €400 or more, while 4 bands were also introduced for the wage subsidy scheme. These frequent policy changes, while responding to needs and learning over the course of the crisis, brought along confusion and higher compliance costs for those participating or managing the programmes.

### *Financing the Policy Response*

The impact of a policy response on incomes depends not only on policies introduced, but also on how they are financed. Progressive income taxation is inequality reducing, while regressive indirect taxation is inequality increasing. Debt finance affects the contract between generations, as borrowing today needs to be paid back in the future. However, in an environment where there is economic growth, the public debt re-payment is more theoretical than actual, whereas the cost of borrowing, which depends upon bond yields, is more important.

The previous crisis in the period prior to 2010 had moderate bond yields, so that the cost of borrowing was important (Figure 3). The fiscal environment in the EU was relatively conservative. As a result, the budgets in 2008 and in 2009 had significant tax increases required to fund the public expenditure increases. The deteriorating public finance bond yields skyrocketed in 2010, effectively locking Ireland out of international bond markets. Consequently, on 28 November 2010, the European Troika of the European Commission, European Central Bank (ECB) and the International Monetary Fund (IMF), agreed a lending programme of €85 billion from these sources and from Ireland itself.<sup>4</sup> These were accompanied by an austerity programme on public expenditure aimed to restore balance in the public finances, with significant distributional implications (Callan et al., 2014; Whelan and Nolan, 2017). This programme, combined with the quantitative easing of the ECB, saw bond yields fall.

The public finance environment for the COVID-19 crisis, although not as robust from a debt point of view as in 2007, was different. The annual public finances had moved to balance before the crisis. Recovery from the crisis has resulted in a relatively low bond yield compared to other countries, particularly Southern European ones (Portugal, Italy, Greece and Spain) which had experienced a major financial crisis. When the COVID-19 pandemic struck, the ECB responded more quickly with monetary policy measures that have kept bond yields low. As a result, in 2020 and expected in 2021, the cost of funding policy measures to mitigate the COVID-19 crisis has come from borrowings rather than from taxation or expenditure reduction measures.

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<sup>4</sup> <https://www.imf.org/en/Countries/IRL/ireland-from-tiger-to-phoenix>

**Figure 3. Irish Bond Yields (10Y)**



Source: Trading Economics

### *Social Partnership*

A feature of the Celtic Tiger in the 1990s was the system of social partnership between government, unions, industry and the NGO sector, established in 1987 (O'Donnell and O'Reardon, 2000). It allowed for dialogue between social partners in making major policy reform. However, during the financial crisis in 2009 this system collapsed as the state by-passed the unions in reducing public expenditure and cutting public sector salaries (Maccarrone et al., 2019).

During the COVID-19 crisis, although there was no formal social partnership process, a series of government negotiations with important social partners, facilitated a unified approach to COVID-19, enabling private sector measures to mitigate the impact of the crisis. In particular, they included important financial costs related to child-care, housing and commuting. A key point highlighted above was negotiating an agreement with child-care providers not to charge fees to parents when child-care facilities closed during the crisis.<sup>5</sup> About 85% of providers signed up to a scheme that provided support with overheads and a wage subsidy to businesses in exchange for not charging fees.

Another important pillar of private sector mitigation measures was the provision of mortgage payment breaks by the banks (Kennelly et al., 2020). In the previous crisis, equity bail-outs of the banking sector left the Irish state with significant shareholdings in 3 of the 5 main retail banks, which meant that the state had more direct influence over the decision making of the Irish banks. Under guidance from the European Banking Authority, and after negotiations with the Irish state, the five main Irish retail banks enabled 67000 mortgage holders to avail of payment breaks by the end of May, about 10% of the total number of mortgage holders. About two thirds had never sought forbearance before and the share rose to over 14% where the loan to income ratio exceeded 4 (Gaffney and Greaney, 2020). In the financial crisis, the combination of unemployment and high prior lending led to 7.4% of mortgages being in arrears of 90 days or more (Lydon and McCarthy, 2013). However, the response of the banks was ad

<sup>5</sup><https://www.earlychildhoodireland.ie/wp-content/uploads/2020/09/Dealing-with-the-Pandemic-Report.pdf>

hoc. Although there were relatively few mortgages foreclosed during the financial crisis,<sup>6</sup> there was no formal insolvency management process until 2012, which meant that households in arrears would have endured a relatively stressful time engaging with their banks until resolutions were found. Early agreements with banks meant that these experiences were largely avoided in the COVID-19 crisis.

In relation to rental accommodation, the state introduced a rent freeze and a moratorium on evictions during the COVID-19 crisis (Kennelly et al., 2020). From a supply side point of view, the reduction in the tourism market saw a shift of many properties from the Airbnb sector into longer term leases, with a 92% growth experienced in Dublin and 41% increase outside the capital (Allen-Coghlan, M. & McQuinn, 2020).<sup>7</sup> Coffey et al. (2020) considered rental affordability, which prior to the crisis was challenging, and concluded that the pandemic would not have made these affordability challenges any worse as a result of the generous supports and the slight fall in rental prices, due to extra supply.

#### 4. Methodology and Data

In order to circumvent the lack of up-to-date household survey data, we utilize a “nowcasting” approach that captures the heterogeneity of changes in the population with the aim to produce a real-time picture of the population (see O’Donoghue et al. 2020 for details). We “update” the latest available wave of the EU-SILC using dynamic microsimulation techniques and real-time detailed statistics on employment, prices and industry-specific growth rates<sup>8</sup>. These control totals are used to calibrate the simulations and to capture the rapid changes in the economy during the crisis, including its heterogeneous consequences for various population sub-groups.

The procedure involves the simulation of disposable income, which is composed of market incomes, benefits and taxes. These depend upon personal, household and labour market characteristics, and tax-benefit parameters. In order to take into account the asymmetry of the shock on the standard of living of the households we use an augmented definition of disposable income, which accounts for housing costs, work-related expenditures, such as childcare and commuting, and capital losses (see O’Donoghue et al. (2020) for details).

Our approach relies on three components, illustrated in Figure 4:

- Income generation model (IGM)
- Tax-benefit model
- Calibration model.

The IGM relies on estimating a system of sequential equations that model the process of income formation for the various components of household income (Sologon et al., 2020b): labour income (employment and self-employment); capital income (property and investment); other income (private pensions and other income). The structure of the labour market is modelled in the Labour Market Module, whereas the levels of income sources are modelled in the Income Module (Figure 4). For converting market incomes into disposable incomes, we apply the NUI-Galway tax-benefit microsimulation model for Ireland (O’Donoghue et al., 2018). The

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<sup>6</sup><https://www.irishtimes.com/business/economy/homes-of-nearly-8-200-irish-mortgage-holders-reposessed-since-crash-1.3421091>

<sup>7</sup><https://www.irishtimes.com/business/economy/pandemic-reveals-impact-of-airbnb-on-irish-rental-market-1.4335784>

<sup>8</sup>Our approach follows the latest development in the field (O’Donoghue and Loughrey, 2014, Sologon et al. 2020a and O’Donoghue et al. 2020) and goes beyond most of the existing literature which only applies price inflation factors and change proportionally the employment rate in specific industries (Navicke et al., 2014).

estimates of the income generation model and the tax-benefit rules are used to simulate/project the distribution of disposable income.

We use two data sources: (i) microdata to estimate/simulate the IGM, and (ii) calibration data to align the simulations with the labour market, prices and income growth changes. Our microdata is the 2008 and the 2017 EU-SILC (Irish component), containing detailed information on the demographics, labour market characteristics, incomes (at one year lag) and living conditions of the households.

In order to calibrate EU-SILC data to reflect the real-time population during the crisis, we use timely external calibration control totals based on the Labour Force Survey, the Live Register, and Price data. First, we align the structure of the labour market in terms of employment, occupation, industry, and unemployment, differentiated by age and gender. Once the labour market is re-simulated and each individual gets a new labour market status, we re-simulate incomes using the IGM as a function of their demographic and labour market characteristics.

In order to account for the differential income growth across industries, we up-rate earnings using industry-specific growth rates. The other income sources are up-rated using consumer price index. Lastly, we update the tax-benefit parameters and the rules to reflect the policies during the desired target period. For the augmented definition of disposable income, we further deduct housing and work-related expenses using data from the Household Budget Survey 2016 and the Irish Household Finance and Consumption Survey 2018.

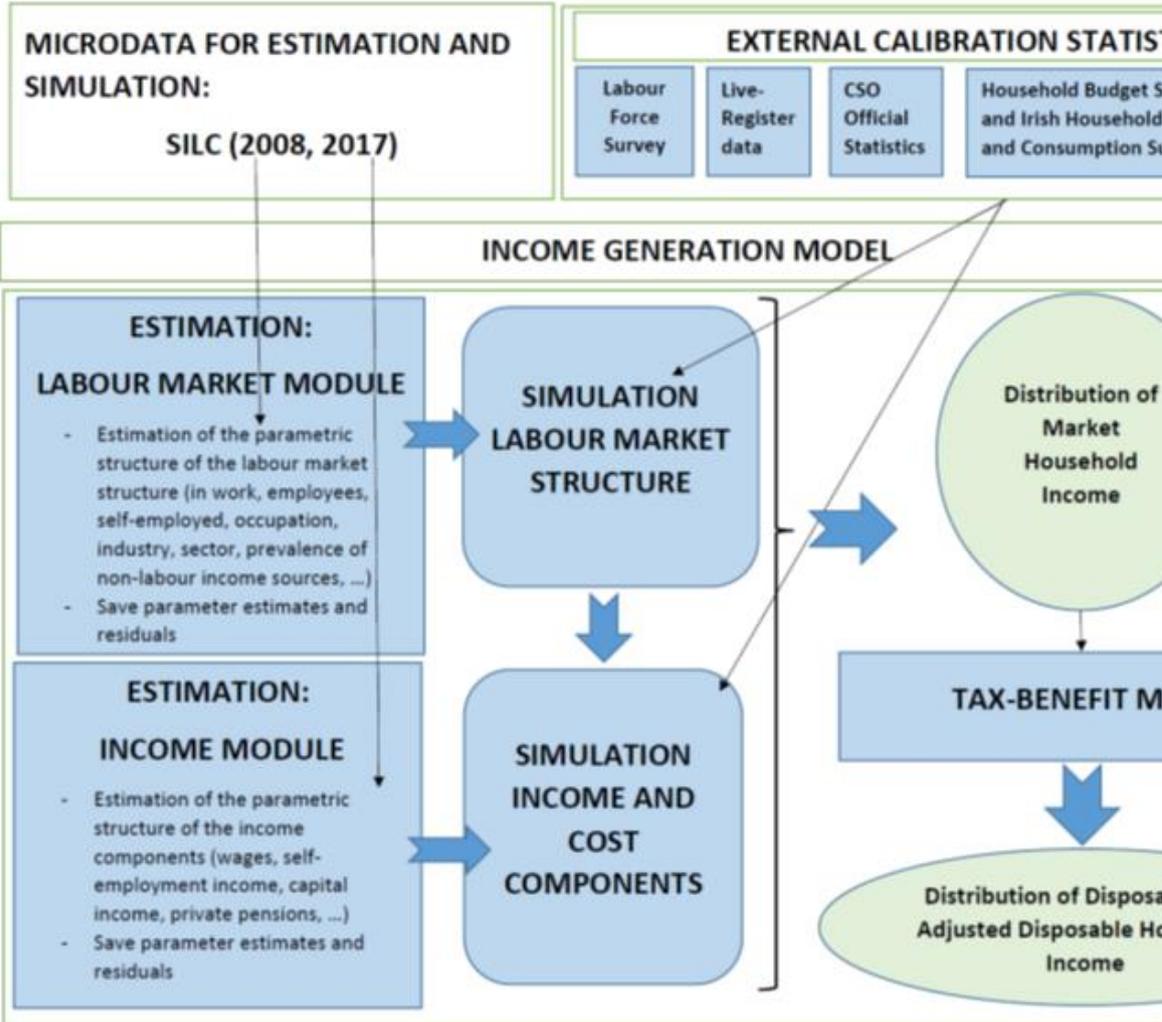
For the COVID period, we use the estimates of the IGM based on the EU-SILC 2017. Using quarterly data, we nowcast to quarter 1, 2020. This is the pre-COVID base distribution against which we evaluate the replacement rates of the system during the crisis. During the crisis, we use weekly data. We nowcast the distribution to reflect the peak of the crisis (week of May 5<sup>th</sup>). All policy changes and innovations during the crisis are evaluated against the shock at the peak.

For the financial crisis, we estimate the IGM using EU-SILC 2008, which we then use to nowcast the data to quarter 2 for 2008-2011. 2008 represents the pre-crisis base distribution against which we evaluate the replacement rates of the policy changes introduced during the financial crisis and the recovery period.<sup>9</sup>

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<sup>9</sup> We nowcast the situation during the 2008 crisis in order to control for demographics and survey changes that would be present if we used actual data instead of nowcasting. Using the same approach in both period allows us to draw policy learnings from the two crises.

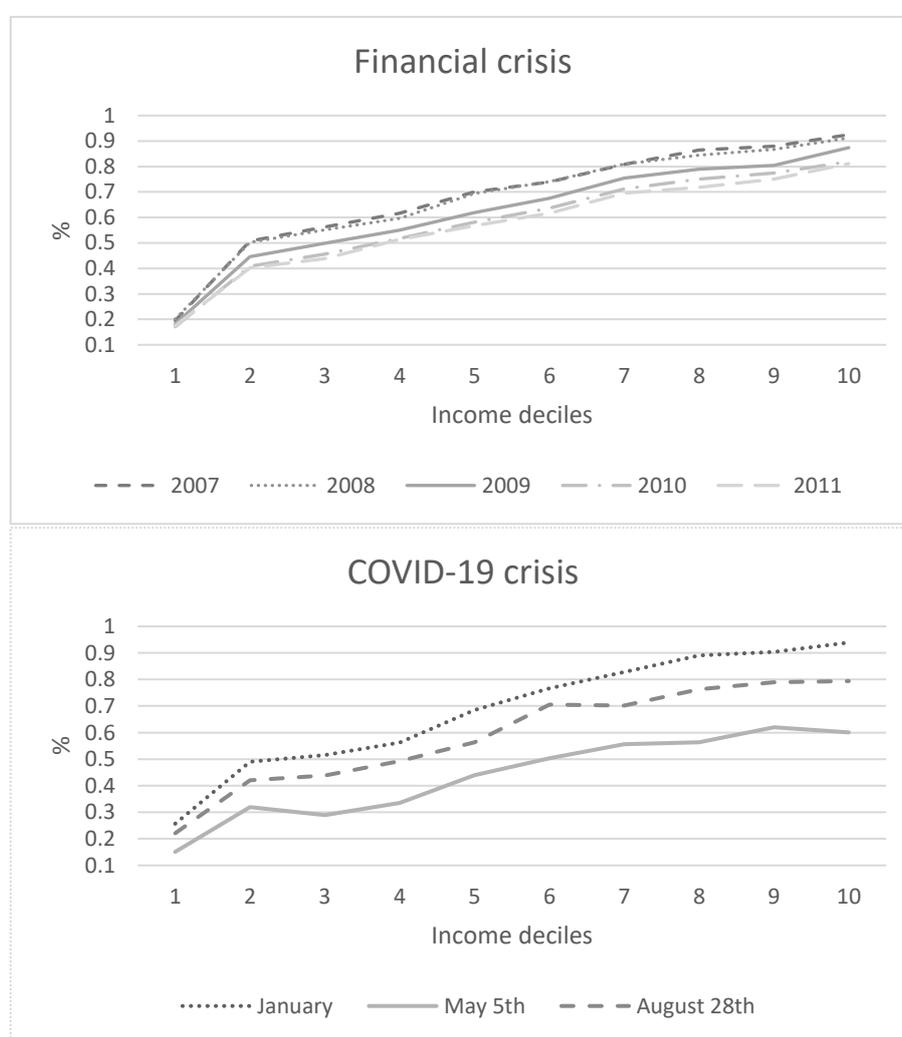
Figure 4. Model infrastructure



## 5. Results

Comparing the impact of the two crises in terms of employment (Figure 5), the COVID crisis was deeper and quicker. The starting positions in both crises were relatively similar, albeit the employment rate at the bottom of the adjusted equivalised disposable income distribution was higher during the COVID-19 crisis as compared to the financial crisis. The biggest fall in employment in the financial crisis occurred in 2009, followed by 2010, with smaller falls occurring in 2008 and 2011. During the COVID-19 crisis, the week of May 5<sup>th</sup> (the pick of the first wave) recorded the largest drop in employment. By the end of the first wave (end of August), the employment rates increased but stayed close to the lowest point in the previous economic crisis.

**Figure 5. Share of individuals in work by deciles in adjusted equivalised disposable income, %**



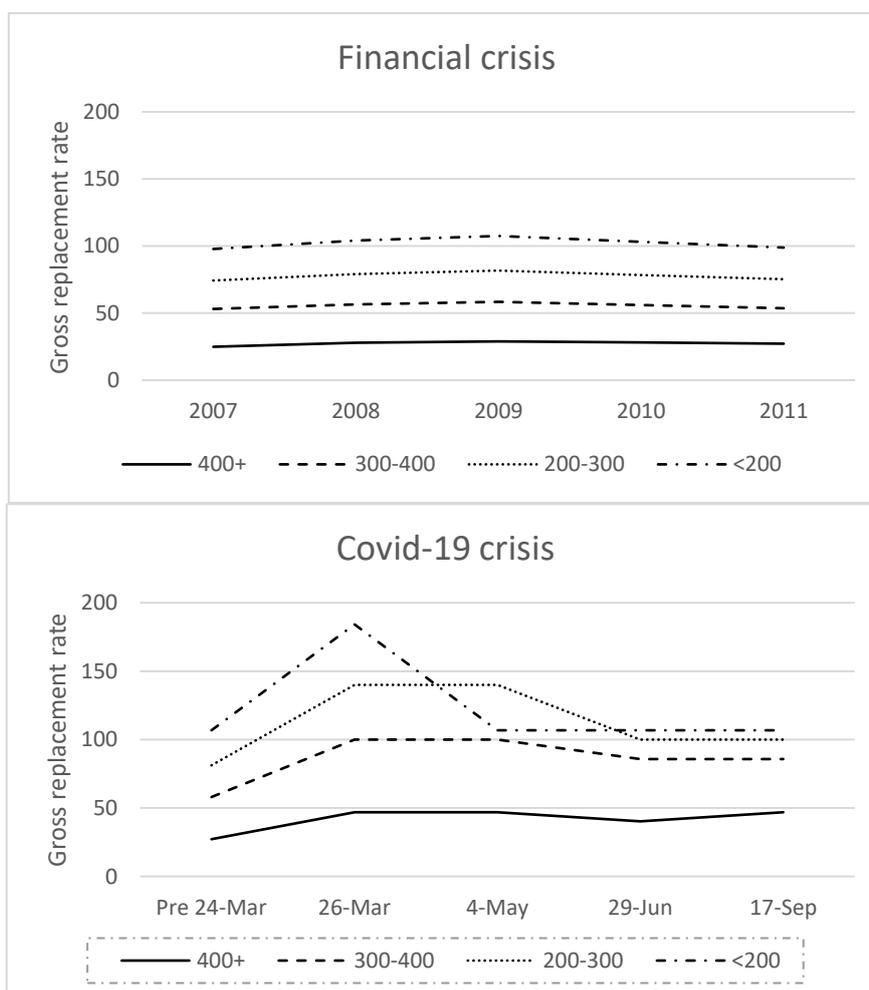
Note: Based on Table B.1 in the Appendix B.

In order to understand how the insurance mechanism of public policy worked during the crises, we utilise the replacement rates defined as the ratio of out-of-work income to in-work income (Callan et al., 1996; O'Donoghue, 2011). The higher the ratio, the higher the insurance impact

of alternative income sources.<sup>10</sup> Figure 6 reports a stylised replacement rate for a single earner on different wage rates. The bands are selected on the basis of the instruments developed in the COVID crisis, that varied by previous earnings. The unit of analysis is the individual and the type of income considered is gross income (i.e. before taxes and contributions).

In the financial crisis, replacement income benefits did not vary much over time and were higher for those with lower previous earnings. In 2007, for example, they ranged between 97.8% for those with an income of €190 and less than 30% for those with the average wage<sup>11</sup>. Over the crisis, as unemployment assistance was on the rise until 2010 when it fell in nominal terms, the replacement rate exhibited the same trend.

**Figure 6. Gross replacement rate for unemployment benefit for single earner in the financial and COVID-19 crises (in %)**



Note: The wage bands represent gross weekly earnings. For the lowest band, we assumed the earnings of €190 if previous earnings were less than €200. Based on Table B.2 in Appendix B.

In the COVID-19 crisis, the gross individual replacement rate was very similar to the financial crisis in mid-March, when the level of the Pandemic Unemployment Rate was set at the level

<sup>10</sup> While higher replacement rates are often regarded as a measure of disincentives to work, they are also used to assess how well standards of living are protected when out-of-work.

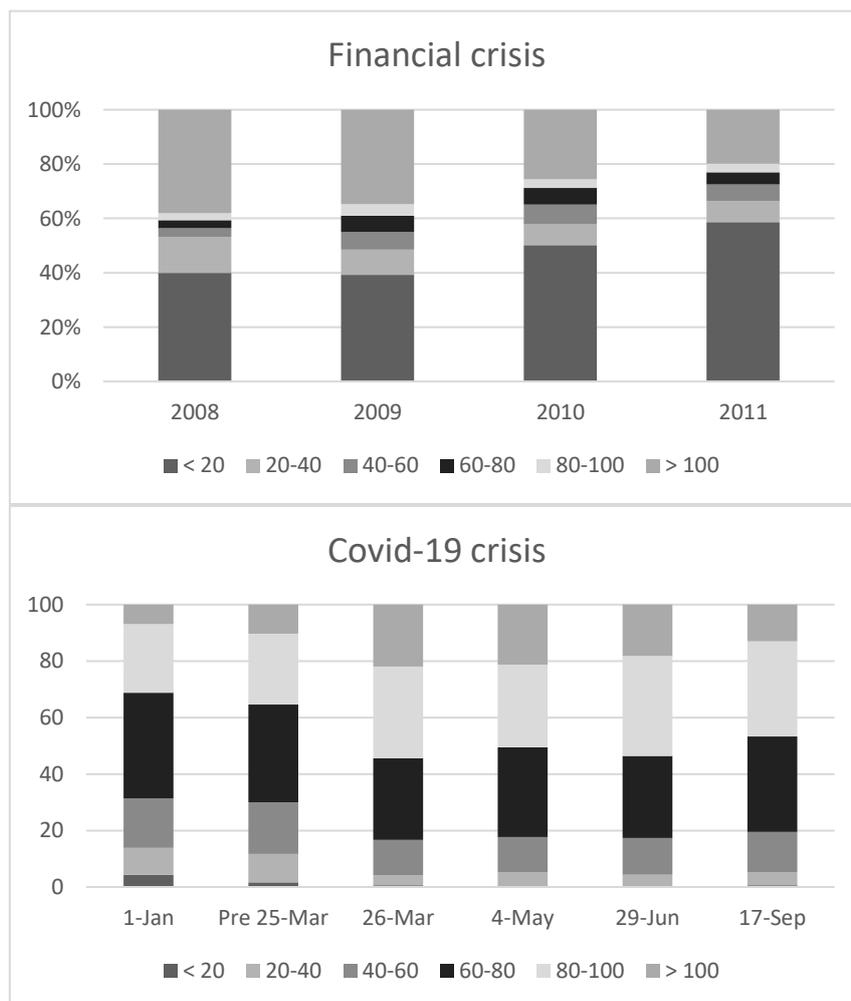
<sup>11</sup> In 2007 this was €685 before rising to €708 in 2008 and 2009, falling in nominal terms to €694 and €690 in 2010 and 2011 respectively.

of the “normal” system. However, when the enhanced payment levels were introduced on March 24, the replacement rate became much higher than under the earlier system, with anyone earning less than €350 pre-crisis having a replacement rate of 100% or higher. The reduction of the lower rate of payment for those earning less than €200 saw their replacement rate fall back at the end of June and for those on higher earnings in mid-September. Replacement rates were much higher during the COVID-19 crisis as compared to the financial crisis.

*Distributional Impact of Policy Interventions*

Figure 7 describes the distribution of the gross replacement rates at an individual level across 6 replacement rates bands and for different systems covering the two crises. The upper panel reflects the replacement rates for the 2008, 2009, 2010 and 2011 systems evaluated against the respective pre-crisis situation. The lower panel reflects the replacement rates of 6 policy systems (January to September 2020), evaluated against the shock at the peak of the crisis (May 2020). The distribution depends on both the income replacement benefit (the numerator) and the individual’s pre-crisis income (the denominator). Comparing the two crises, we find a lower share of individuals with a low replacement rate (less than 20%) in the COVID crisis than in the financial crisis.

**Figure 7. Distribution of gross replacement rates at the individual level, %**



Note: Based on Table B.3 in Appendix B.

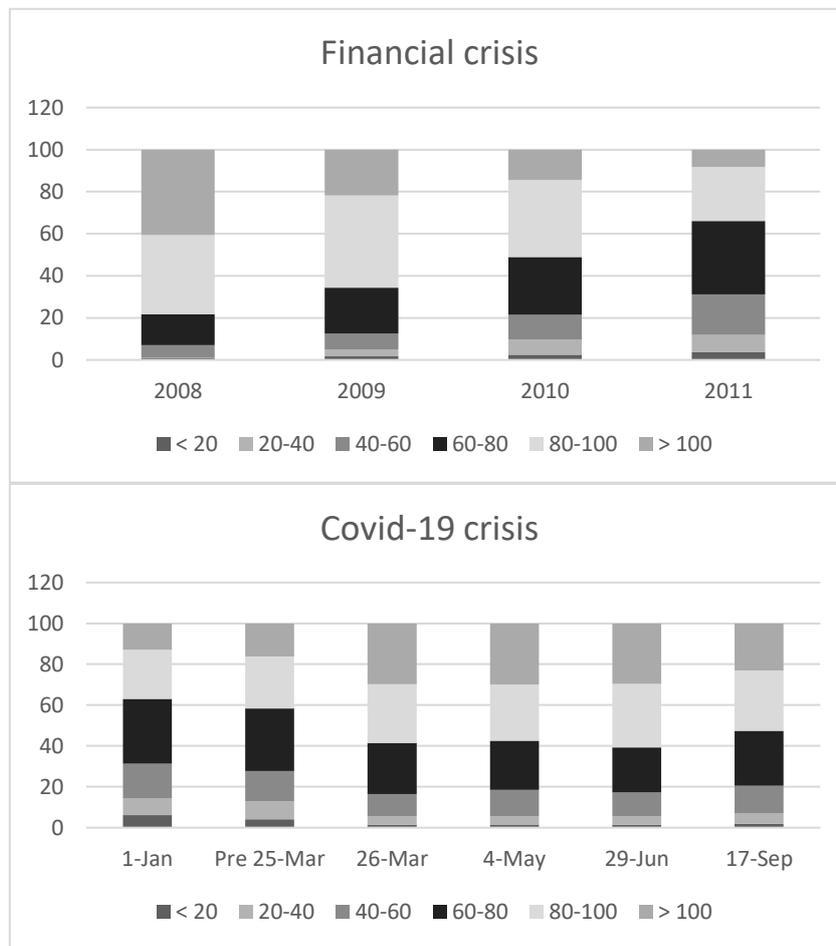
For the other bands the story is not as clear cut. At the other end of the distribution, the earlier years of the financial crisis had a higher share of those with replacement rates of over 100%. Part of the reason for this is that the financial crisis started more slowly, with a relatively small number of people losing their jobs in 2008. One of the features of the model is that those with the lowest employment potential (low skills or experience, in sectors that were disproportionately affected by the crisis, working part-time or part-year or with caring responsibilities) lose their jobs first. People with these characteristics have lower earnings and as a result have higher replacement rates with benefits that are not dependent upon income. Gradually, as the crisis evolved, a greater share of those with higher earnings lost their jobs, resulting in a falling share of higher replacement rates to 2011. In the COVID-19 crisis, the onset was rapid, with businesses closing by regulation rather than through a gradual process. Thus a higher share of those with higher incomes lost their jobs immediately.

For this reason, 2011 is a better comparator with the COVID-19 crisis. In 2011, 66.4% of those who lost their job had a replacement rate of less than 40%. This was substantially higher than would have been the case if the system that existed in January 2020 had been applied in May 2020. When the higher rate instruments were introduced in the system during the COVID-19 crisis, the share with a replacement rate below 40% fell to just about 4-5%. In 2011, 27.5% of people who lost their job had a gross replacement rate of over 60%, which was identical to that if the January 2020 system had applied. However, it rose to 45% in the March 25 system. Categorising replacement rates of 60% or higher as generous, the introduction of the lower rate in June reduced the share of high replacement rate slightly, while the reduction in the higher PUP rate to €300 in September reduced the share of to below 40%.

Moving to household disposable income (after subtracting taxes and contributions), in Figure 8, we report the distribution of replacement rates at the household level. In order to account for housing and work-related expenses, we further adjust disposable income for them.

As in the case of the gross individual level replacement rate, 2011 is a better comparator. In the early part of the financial crisis, there were more cases where only one spouse lost their work, enabling the other partner's income to partially insulate from this loss. As a result, in 2008, over 90% of households had a net replacement rate of over 60%. This declined, however, to less than 70% in 2011. This is similar to what would have been observed at the peak of the COVID-19 crisis if the January 2020 system would have been in place (instead of the crisis-induced policy innovation). The March 26<sup>th</sup> system increased the share of replacement rates of 60% or higher to over 83%, with greater targeting in subsequent reforms, reducing this to under 80% in the September system.

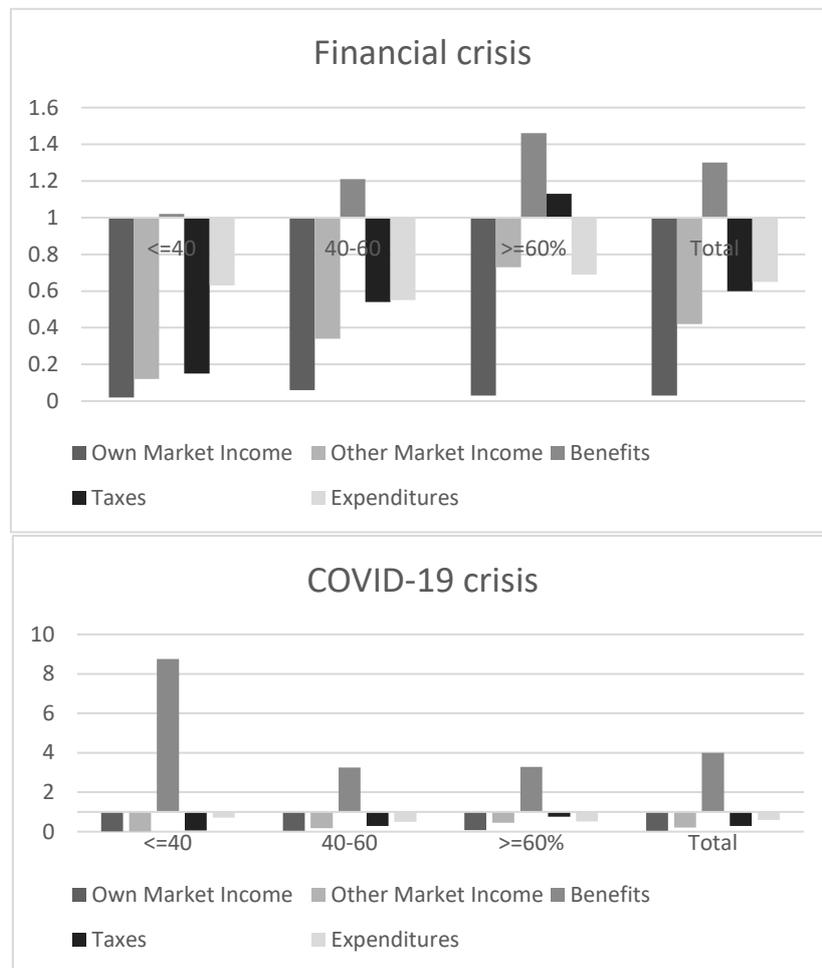
**Figure 8. Distribution of household net replacement rate (incorporating work-related and housing-related expenditures), %**



Note: Based on Table B.4 in Appendix B.

Figure 9 reports the change in income components pre and post crisis for the 2011 system in the financial crisis and the May 2020 system in the COVID-19 crisis. Market income is split into two, own income for the person who lost their job and other income for others in the household. We see that in 2011, other market income stayed on average 73% of pre-crisis levels for those with the highest replacement rates, while it was only 12% on average for those with the lowest replacement rates. Given the higher employment loss in May 2020 than in 2011, other family income had a smaller impact at 45% of pre-crisis levels. Benefit levels increased radically more, reflecting the higher gross replacement rates reported above. Given the greater loss of other market income, taxes and contributions fell more for the high replacement rate group in 2020 than 2011. In addition, income support measures in 2011 were funded by higher taxation, whilst in 2020, these measures were funded from future debt, further impacting upon the way taxation helped to reduce the gap between in-work and out of work incomes.

**Figure 9. Change in income components by net replacement rate for those who lost their job during the crisis**



Note: Based on Table B.5 in Appendix B.

Finally, as a result of social partnership measures in relation to rent freezes and mortgage interest deferrals in the 2020 crisis, “compulsory” expenditures relating to work and housing costs fell more for those with higher replacement rates in 2020, further insulating household living standards in the crisis.

Table 1 details the average change in these “compulsory” costs pre and post crisis for those who lost their job during both crises. We note in both cases that child-care and commuting costs fell when people lost their jobs, but that nominal housing costs did not adjust in the 2011.<sup>12</sup> The population who lost jobs in the financial crisis were younger and less likely to have children, reflecting lower child care costs. Pre-crisis, commuting costs were similar for both population groups. However as many of those who remained at work in the COVID-19 crisis were able to do so from home, their commuting costs fell by more than in the financial crisis. Deferred mortgage payments reduced compulsory costs in 2020, however it should be noted that housing costs were much higher in 2020 than in 2011, reflecting both the fact that housing costs had increased, but also that the COVID-19 crisis affected more those who were middle aged and had substantial mortgages than those affected in the financial crisis.

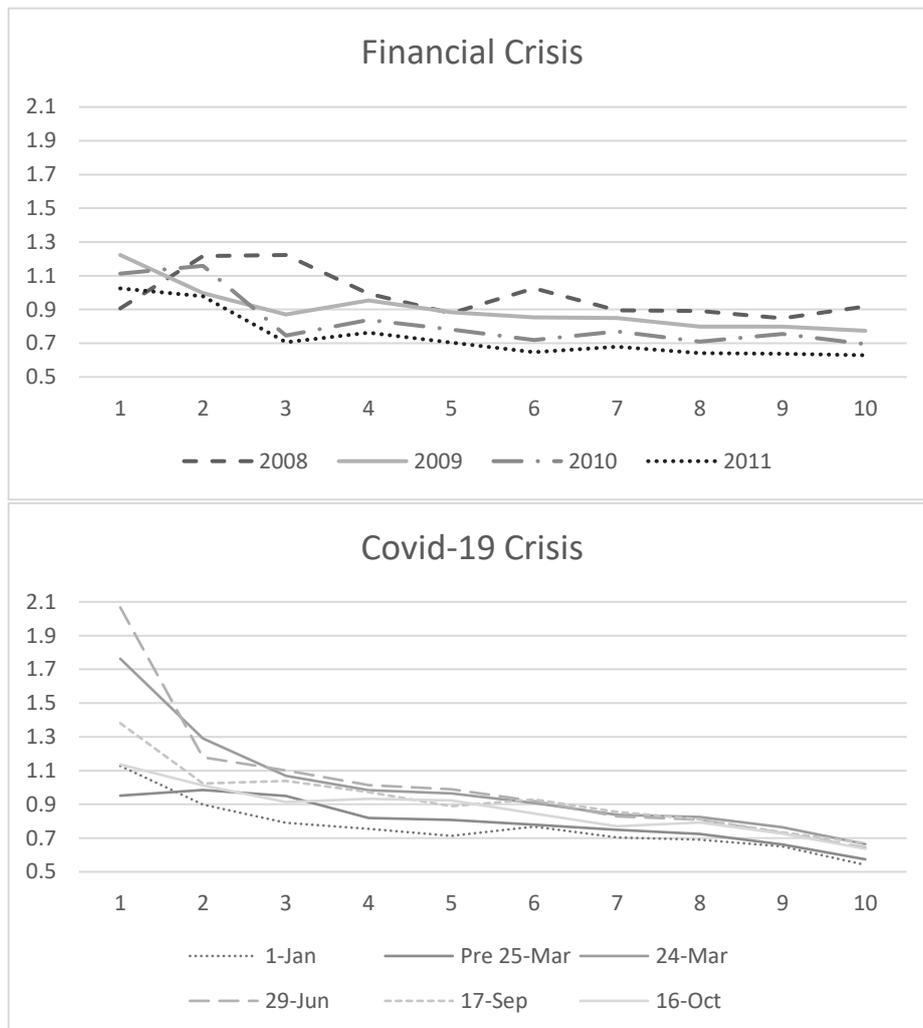
<sup>12</sup> In reality many individuals stopped paying their mortgage and accumulated unauthorised mortgage arrears, bringing with it the stress associated with lawyers’ letters and court cases.

**Table 1. Average “compulsory” costs for the unemployed in both crises**

Expenditures related to	Financial Crisis			COVID Crisis		
	2007	2011	2011/2007	2020 Jan	2020 May	May/January
Childcare	897	386	0.43	1889	258	0.14
Commuting	2723	1352	0.50	2780	419	0.15
Housing	1619	1619	1.00	4603	3815	0.83
<b>Total</b>	<b>5239</b>	<b>3357</b>	<b>0.64</b>	<b>9272</b>	<b>4491</b>	<b>0.48</b>
Housing Share	0.309	0.482		0.496	0.849	

In Figure 10 we report the average replacement rates across the pre-crisis income distribution, taking adjusted equivalised household disposable income as the basis of the deciles. In most cases the average net replacement rates were higher at the bottom of the distribution than at the top. However, given the relative importance of the PUP, and lower pre crisis incomes at the bottom during the COVID-19 crisis, we see how the crisis was inequality reducing.<sup>13</sup> The greater targeting of the PUP resulted in an increased average replacement rate at the bottom of the distribution. Even with a more constrained system in September, the average replacement rates for those in the bottom two deciles were over 100%.

**Figure 10. Average adjusted net replacement rate by pre-crisis decile**

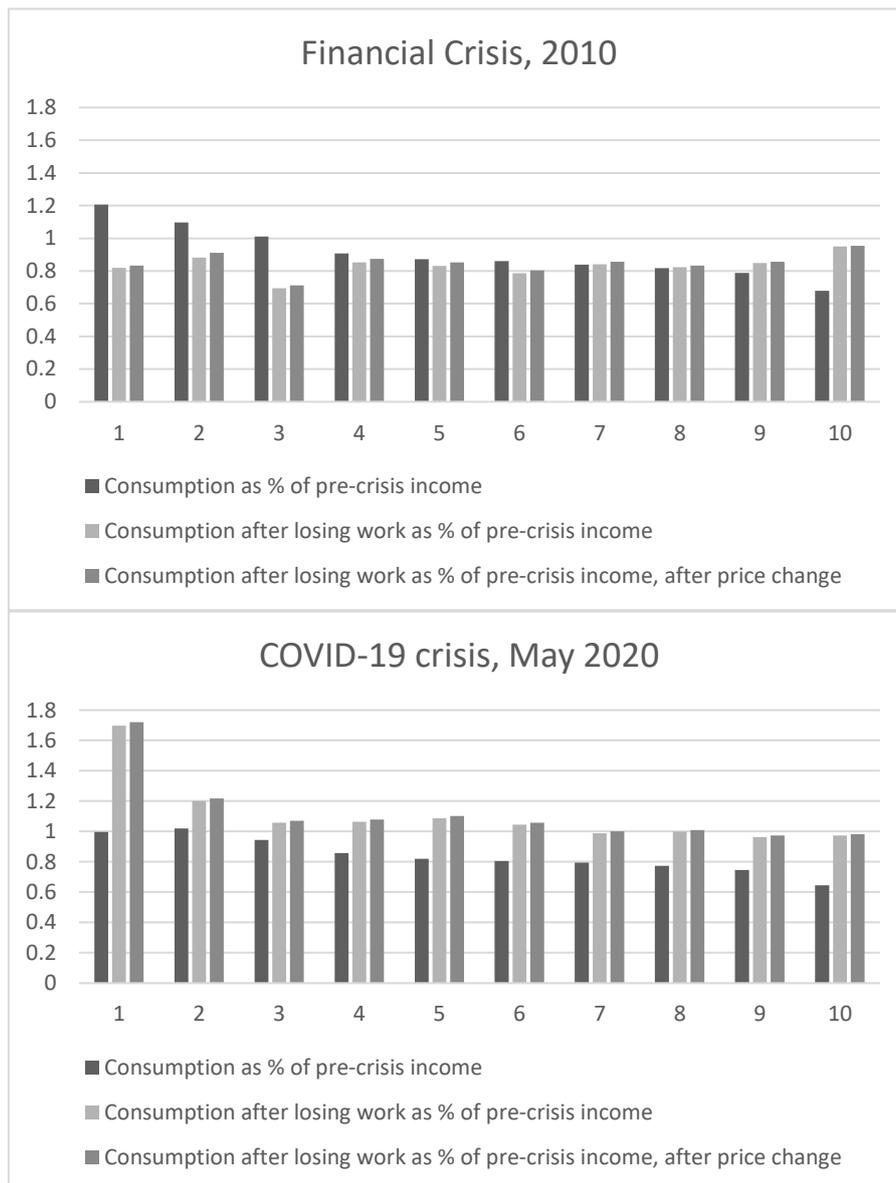


Note: Based on Table B.6 in Appendix B.

<sup>13</sup> It should be noted that this table only includes those who lost their jobs. Incomes also changed for those who remained in work, if their work related costs fell as a result of lower commuting or child care costs.

In the short term, what matters to a household’s financial well-being is its capacity to purchase the normal basket of goods and services that it consumes. Utilising the relationship between disposable income and expenditure from the Household Budget Survey we report in Figure 11 the consumption patterns during both crises as a percentage of disposable income measured in the pre-crisis periods. As savings increase with higher earnings, the share of disposable income used for consumption declines over the course of the income distribution. It is also often above 100% at the bottom of the distribution as poor people sometimes consume from savings if they temporarily do not have sufficient inflow of incomes.

**Figure 11. Purchasing Power by Pre-Crisis Decile**



Note: Based on Table B.7 in Appendix B.

The amount of purchasing power from consumption depends upon prices. Prices fell in both crises as a result, in part, of lower demand. As these price falls were higher in necessities (such as rent or fuel) than for other items, and as the poorer consume a higher share of necessities than the richer, the price falls were felt more by poorer people.

Applying the replacement rate to previous income and adding savings from the pre-crisis year, we get an estimate of potential consumption in the crisis year.<sup>14</sup> As a result of the lower replacement rates in 2011, potential consumption is less than pre-crisis disposable income across all deciles, with most deciles having about 85% of pre-crisis potential expenditure. It presumes that dissavings that originally took place must be replenished. It means that those in the bottom 6 deciles have lower potential consumption than pre-crisis, without savings, while those in the top 4 deciles still have the potential to save. However, in the COVID-19 crisis, the higher average replacement rates mean that all, in the absence of savings, have the capacity to meet pre-crisis consumption. Adjusting for the lower prices that pertained post crisis in both cases increased purchasing power, particularly for the poorest, but it did not change the conclusions significantly.

## 6. Discussion

We discuss next how differences in the social policy response during the financial and COVID-19 crises have reflected on people's trust in government and its actions.

Drawing upon the theoretical framework, the response to the COVID crisis was more generous than that in the financial crisis. Although there was a large increase in expenditure in the former crisis, low interest rates (due to ECB interventions) have enabled additional and more generous expenditures to be incurred without contemporaneous financing through taxation. Although the COVID crisis was deeper and quicker, the potential for the family as an insulating mechanism was lower than during the financial crisis, particularly in the earlier years. This was nevertheless compensated by the higher generosity of the benefit system, which enabled replacement rates or the insulating impact of public policy to be higher.

Another important feature of the COVID crisis, compared to the financial crisis was the use of non-fiscal instruments such as regulation in the case of rental markets, public sector ownership in relation to mortgage deferrals and social partnership in relation to child care costs to defer and protect some of the non-discretionary costs that households faced. In the case of those who lost their jobs, this improved their purchasing power and reduced their potential volatility.

Overall, although the responses in both crises were skewed towards the bottom of the distribution, the COVID reforms were better able to protect consumption levels for all income groups than in the financial crisis. Key to enabling a more insulating impact of the tax-benefit system in the COVID crisis was the rapid introduction of a more generous benefit with uniform entitlement for those who lost their jobs. This instrument improved the replacement rate of higher income workers relative to the "normal" system that prevailed prior to the crisis.

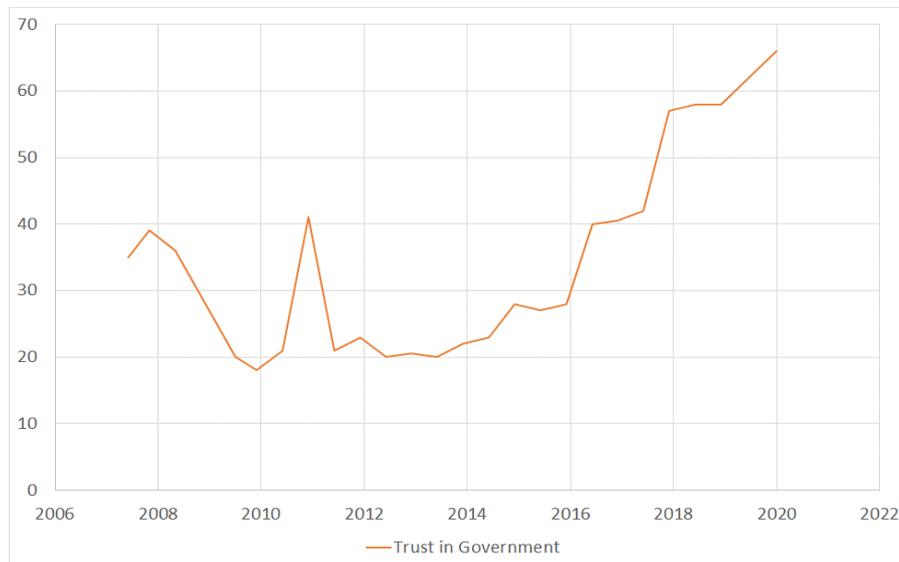
Figure 12 summarizes changes in trust in government over the financial and COVID-19 crises. Just before the onset of the financial crisis, around 40 percent of the respondents expressed trust in national government. The level of trust went then rapidly down, reaching its lowest point in 2010, following the introduction of drastic austerity measures. Except for 2011, the level of trust stayed around 20% until 2014. The stabilization of economic situation, followed by the strong economic growth, stimulated a steady increase in the level of trust in government, which reached 58% in 2019. Remarkably, a strong policy response in early months of the

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<sup>14</sup> Although this presumes that all savings would be usable in the crisis year, it is an indication of potential consumption.

COVID-19 crisis resulted in further increase in the level of trust, which reached the unprecedented level of more than 65% in July 2020.

**Figure 12. Public Attitudes around Financial Crisis, in %**



Source: Based on Eurobarometer surveys.

## 7. Conclusions

This paper aims to assess the relative impact of public and private policy responses on household incomes in times of crisis, contrasting the COVID-19 crisis with the financial crisis of 2008-2012. Both crises are highly asymmetric, affecting different people in different ways, variability that allows us to look more in depth at policy learnings.

Policy learning during the fast-developing COVID-19 crisis is challenged by the lack of real-time household survey data with detailed information on the socio-economic characteristics of the households. To overcome this challenge, we use a “nowcasting” method, which aligns available income information with the real-time labour market statistics and policy changes using dynamic microsimulation techniques.

We find a stronger social policy impact during the COVID-19 crisis than during the financial crisis. As the impact of the COVID-19 crisis was deeper and quicker, family support was not as strong as in the financial crisis. Private support based on social partnership, was, in contrast, stronger. As a result, those on lower incomes ended up with higher disposable incomes at the onset of the COVID-19 crisis as compared with the pre-crisis period.

From a social policy perspective, our paper reinforces the idea that public provision of welfare plays an important role in mitigating household income losses during crisis periods. Our results signal that the design of tax-benefit instruments matters for maintaining incomes at the pre-crisis levels and is contingent on the budgetary situation and the ability of the government to borrow money for covering budget deficits.

We contribute to the literature by demonstrating the advantages of a broader approach to social policy responses in the period of crisis. Our findings suggest that a series of government negotiations with important social partners enabled private sector measures to complement public policy responses to the COVID-19 crisis in terms of mitigating its impact on living

standards. Following these negotiations, households could save on reductions in housing, childcare and other work-related costs during the COVID-19 crisis, which allowed them to meet the pre-crisis level of consumption even in the absence of savings. This did not happen during the financial crisis, when limited income support programs provided by the government were not accompanied by private policy responses via social partnership channels.

Lastly, we show that by providing a combination of public and private policy responses in times of crisis the government may gain higher levels of trust voters. Strong austerity measures during the financial crisis and the absence of private responses through social partnership resulted in a drastic decline in the level of trust in public institutions over that period. In contrast, the combination of public and private policy response at the onset of the COVID-19 crisis was accompanied by further increases in the levels of trust in governmental actions. Given that the main motivation of the government to perform income redistribution is motivated by political interests, higher trust in its actions serves as a success indicator.

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## Appendix A: Policy changes during the crises

**Table A.1. Policy Responses to the Financial and COVID Crises**

	2007-2012	2020 COVID Phase 1
Structural change	2008	2020
	2009 Increase in contributory requirements for SW Reduced length of social insurance Reduced duration of entitlement to illness benefit	1 Flat rate CWS and low flat rate PUP (15 March) 2 Earnings rate CWS 1 and high flat rate PUP (26 March) 3 Earnings rate CWS 2 and high flat rate PUP (May 4) 4 Earnings rate CWS 2 and two rate PUP (July 1)
	2009 Supplementary Budget Abolition of early childcare supplement Discontinuation of mortgage interest relief Removal of Christmas Bonus for SW payments Reduction for SW recipients aged under 20 Pension deduction for public servants	5 Double rate CWS 2 and three rate PUP (September 1) 6 Double rate CWS 2 and four rate PUP (October 22)
	2010	
Generosity	2008 Pension age increases No working age increases	2020 Increased generosity in new instruments (PUP, WSS, CEIB)
	2009 Pension age increases Working age increases	
	2010 Reduction in working age payments Reduction in child benefits Reduction in public sector salaries	
Supplementary policy change	2009 Supplementary Budget	Six policy phases
Financing	2008 Moderate bond yields Tax increase of €1585m	Low bond yields Debt financing
	2009 Moderate bond yields Tax increase of €1171m	
	2009 Supplement Moderate bond yields Tax increase of €3621m	
	2010 High bond yields Tax increases of €126m	
	2011 High bond yields Tax increases of €475m	
Housing	Rental price collapse House price collapse Negative equity Collapse in confidence Lots of attempted foreclosures – limited actual evictions	Agreement with banks (most of which had been nationalised in previous crisis) for mortgage payment breaks No evictions + rent freeze during lock down

Child care	Very expensive Abolition of early child care subsidy	Social partnership agreement with child care providers to stop contracts during lockdown Maintained child care subsidy
Prices, expenditure and savings	Fall in purchasing power Fall in prices Increased savings	Fall in capacity to purchase due to store closures Moderate price fall Increased savings Quick bounce back after re-opening

Note: PUP stands for pandemic unemployment payment; WSS stands for wage subsidy scheme.

## Appendix B: Supplementary data

**Table B.1. Share of individuals in work by deciles in adjusted equivalised disposable income**

Decile	Financial Crisis					COVID Crisis		
	2007	2008	2009	2010	2011	January	May 5th	August 28th
1	0.195	0.201	0.182	0.171	0.175	0.257	0.151	0.221
2	0.508	0.503	0.446	0.409	0.402	0.490	0.319	0.420
3	0.563	0.551	0.499	0.456	0.438	0.515	0.290	0.438
4	0.617	0.596	0.550	0.518	0.514	0.562	0.335	0.493
5	0.701	0.694	0.619	0.581	0.568	0.685	0.440	0.563
6	0.739	0.740	0.676	0.636	0.617	0.767	0.504	0.705
7	0.808	0.810	0.754	0.712	0.695	0.828	0.556	0.702
8	0.865	0.844	0.790	0.750	0.718	0.890	0.563	0.763
9	0.880	0.867	0.804	0.774	0.751	0.904	0.620	0.790
10	0.925	0.912	0.874	0.819	0.811	0.939	0.601	0.794
Total	0.702	0.693	0.640	0.603	0.588	0.711	0.456	0.612
Ratio Q5:Q1	2.568	2.527	2.672	2.747	2.707	2.466	2.599	2.469

**Table B.2. Gross replacement rate for unemployment benefit for single earner in the financial and COVID-19 crises (in %)**

<b>Panel A: Financial crisis</b>					
Previous wage band	2007	2008	2009	2010	2011
400+	24.9	27.9	28.9	28.2	27.2
300-400	53.1	56.5	58.4	56.0	53.7
200-300	74.3	79.1	81.7	78.4	75.2
<200	97.8	104.1	107.5	103.2	98.9
<b>Panel B: COVID-19 crisis</b>					
Previous wage band	Pre 24-Mar	26-Mar	4 May	29-Jun	17-Sep
400+	27.2	46.9	46.9	40.2	46.9
300-400	58.0	100.0	100.0	85.7	85.7
200-300	81.2	140.0	140.0	100.0	100.0
<200	106.8	184.2	106.8	106.8	106.8

Note: The wage bands represent gross weekly earnings. For the lowest band, we assumed the earnings of €190 if previous earnings were less than €200.

**Table B.3. Distribution of gross replacement rates - individual level**

Financial Crisis						
Replacement Rate Band	2008	2009	2010	2011		
< 20	40.01	39.30	50.18	58.67		
20-40	13.08	9.27	7.61	7.75		
40-60	3.38	6.39	7.26	6.06		
60-80	2.89	6.06	6.18	4.47		
80-100	2.61	4.15	3.15	3.19		
> 100	38.03	34.83	25.62	19.86		
COVID-19 Crisis						
Replacement Rate Band	01-Jan	Pre 25-Mar	26-Mar	4 May	29-Jun	17-Sep
< 20	4.31	1.62	0.61	0.53	0.32	0.60
20-40	9.56	10.05	3.55	4.78	4.04	4.55
40-60	17.53	18.33	12.52	12.43	13.04	14.32
60-80	37.45	34.61	28.93	31.76	28.98	33.81
80-100	24.30	25.11	32.42	29.21	35.45	33.70
> 100	6.85	10.29	21.98	21.29	18.18	13.02

**Table B.4. Distribution of household net replacement rate (incorporating work-related and housing-related expenditures)**

Financial Crisis						
Replacement Rate Band	2008	2009	2010	2011		
< 20	0.84	1.69	2.56	3.63		
20-40	0.14	3.39	7.22	8.30		
40-60	6.01	7.45	11.64	19.24		
60-80	14.74	21.89	27.58	34.88		
80-100	37.74	43.90	36.54	25.75		
> 100	40.53	21.67	14.45	8.20		
COVID-19 Crisis						
Replacement Rate Band	01-Jan	Pre 25-Mar	26-Mar	4 May	29-Jun	17-Sep
< 20	6.22	4.13	1.45	1.29	1.47	1.94
20-40	8.07	8.89	4.3	4.23	4.16	4.98
40-60	16.99	14.76	10.67	12.92	11.68	13.59
60-80	31.74	30.5	25.01	24.17	21.92	26.95
80-100	24.06	25.58	28.8	27.41	31.09	29.55
> 100	12.91	16.14	29.77	29.98	29.68	22.99

**Table B.5. Change in income components by net replacement rate for those who lost their job form pre-crisis**

	Own Market Income (as % of pre-crisis levels)	Other Market Income (as % of pre-crisis levels)	Benefits	Taxes	Expenditures
Replacement Rate Band	Financial Crisis (2011)				
<=40	0.02	0.12	1.02	0.15	0.63
40-60	0.06	0.34	1.21	0.54	0.55
>=60%	0.03	0.73	1.46	1.13	0.69
Total	0.03	0.42	1.30	0.60	0.65
	COVID Crisis (May 2020)				
	Own Market Income (as % of pre-crisis level)	Other Market Income (as % of pre-crisis levels)	Benefits	Taxes	Expenditures
<=40	0.01	0.02	8.76	0.06	0.71
40-60	0.04	0.17	3.25	0.28	0.50
>=60%	0.07	0.45	3.28	0.76	0.51
Total	0.04	0.20	3.99	0.29	0.60

**Table B.6. Average adjusted net replacement rate by pre-crisis decile**

	Financial Crisis				COVID Crisis					
	2008	2009	2010	2011	01-Jan	Pre 25-Mar	24-Mar	29-Jun	17-Sep	16-Oct
1	0.906	1.223	1.113	1.025	1.128	0.951	1.763	2.067	1.381	1.136
2	1.217	0.998	1.159	0.978	0.899	0.985	1.291	1.178	1.024	1.013
3	1.223	0.871	0.745	0.705	0.791	0.949	1.068	1.101	1.039	0.914
4	0.994	0.953	0.839	0.762	0.755	0.820	0.983	1.014	0.972	0.933
5	0.878	0.883	0.782	0.704	0.714	0.807	0.964	0.989	0.890	0.924
6	1.026	0.854	0.719	0.647	0.768	0.779	0.908	0.920	0.928	0.846
7	0.895	0.849	0.771	0.680	0.703	0.749	0.838	0.829	0.855	0.770
8	0.891	0.798	0.709	0.641	0.690	0.724	0.825	0.809	0.812	0.793
9	0.848	0.798	0.755	0.637	0.651	0.662	0.764	0.729	0.733	0.726
10	0.917	0.774	0.695	0.629	0.541	0.574	0.664	0.643	0.670	0.637
<b>Total</b>	<b>0.940</b>	<b>0.860</b>	<b>0.781</b>	<b>0.695</b>	<b>0.718</b>	<b>0.751</b>	<b>0.912</b>	<b>0.912</b>	<b>0.874</b>	<b>0.818</b>
Q5 to Q1	0.832	0.708	0.639	0.632	0.588	0.638	0.467	0.423	0.583	0.634

**Table B.7. Purchasing power by pre-crisis decile**

Deciles	Consumption Pre Crisis as % of income		Price Change		Consumption after losing work as % of pre-crisis income		Consumption after losing work as % of pre-crisis income, after price change	
	Financial Crisis	COVID Crisis	Financial Crisis	COVID Crisis	Financial Crisis	COVID Crisis	Financial Crisis	COVID Crisis
			2010	May	2010	May	2010	May
1	1.206	0.996	-0.018	-0.013	0.819	1.697	0.834	1.720
2	1.096	1.020	-0.034	-0.014	0.881	1.200	0.912	1.218
3	1.011	0.944	-0.026	-0.013	0.694	1.058	0.712	1.071
4	0.908	0.858	-0.024	-0.013	0.853	1.065	0.874	1.079
5	0.872	0.819	-0.024	-0.013	0.832	1.087	0.852	1.101
6	0.860	0.806	-0.020	-0.012	0.787	1.045	0.803	1.057
7	0.839	0.794	-0.018	-0.011	0.841	0.989	0.856	1.001
8	0.817	0.773	-0.012	-0.011	0.824	0.998	0.834	1.009
9	0.788	0.747	-0.008	-0.010	0.849	0.964	0.856	0.974
10	0.678	0.646	-0.004	-0.010	0.951	0.973	0.955	0.983
Total	0.863	0.807	-0.009	-0.010	0.832	1.049	0.839	1.060

Source: Household Budget Survey